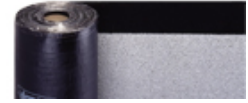


ESTERDAN PLUS 40/GP ELAST.

ESTERDAN PLUS 40/GP ELAST. is a waterproofing bituminous sheet with self-protected surface of 4.0 kg/m².

Composed of a reinforced polyester felt reinforcement, covered on both sides with SBS modified bitumen mastic. On the upper side of the sheet, mineral protection in white colour is used as protective material. The anti-adhesive material used on the lower side is polyethylene film.



TECHNICAL DATA

TECHNICAL DATA	VALUE	UNIT	STANDARD
External fire performance	Broof(t1)	-	UNE-EN 1187; UNE-EN 13501-5
Reaction to fire	E	-	UNE-EN 11925-2; UNE-EN 13501-1
Watertightness	Pasa	-	UNE-EN 1928
Longitudinal tensile strength	700 ± 200	N/5cm	UNE-EN 12311-1
Transversal tensile strength	450 ± 150	N/5cm	UNE-EN 12311-1
Longitudinal elongation at break	45 ± 15	%	UNE-EN 12311-1
Transversal elongation at break	45 ± 15	%	UNE-EN 12311-1
Resistance to root penetration	No Pasa	-	UNE-EN 13948
Resistance to static loading	> 15	kg	UNE-EN 12730
Resistance to impact	> 1000	mm	UNE-EN 12691
Longitudinal resistance to tearing (nail shank)	PND	N	UNE-EN 12310-1
Transversal resistance to tearing (nail shank)	PND	N	UNE-EN 12310-1
Joint strength: peel resistance	PND	-	UNE-EN 12316-1
Joint strength: shear resistance	450 ± 150	-	UNE-EN 12317-1
Flexibility at low temperature	< -15	°C	UNE-EN 1109
Humidity resistance factor	20.000	-	UNE-EN 1931
Dangerous substances	PND	-	-
Flexibility at low temperature (pliability) after aging	-5 ± 5	°C	UNE-EN 1109
Flow resistance at elevated temperature after aging	100 ± 10	°C	UN-EN 1110

Pasa = Positive or correct No pasa = Negative PND = No performance determined - = Not necessary

ADDDITIONAL TECHNICAL DATA

ADDDITIONAL DATA	VALUE	UNIT	STANDARD
Mass per unit area (nominal)	4.0	kg/m ²	-
Mass per unit area (minimum)	3.8	kg/m ²	-
Nominal thickness	2.5(SOLAPO)	mm	-
Flow resistance at elevated temperature	> 100	°C	UN-EN 1110
Dimensional stability at elevated temperature (longitudinal)	< 0.3	%	UNE-EN 1107-1
Dimensional stability at elevated temperature (transversal)	< 0.3	%	UNE-EN 1107-1
Adhesion of granules	< 30	%	UNE-EN 12039

Membranes thickness tolerance: = -0,3 mm, apart from membranes with thickness 2 and 2,4 mm whose tolerance is = -0,2 mm.

Membranes mass per unit area tolerance: -5% (mini) and +10% (maxi) from nominal value.

STANDARDS AND CERTIFICATION



EN 13707 standard.

EN 13969 standard.

CE marking.

BBA 10/4787 Product Sheet 1 "GLASDAN ELAST, ESTERDAN ELAST AND POLYDAN ELAST ROOF WATERPROOFING MEMBRANES".

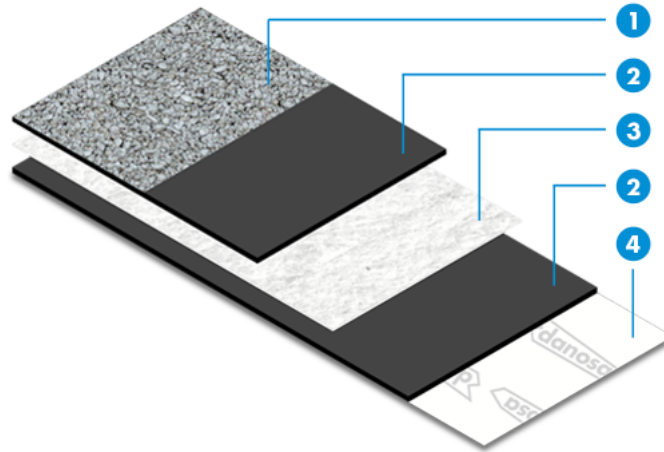
ATE 06/0062 "Esterdan Plus FM Bicapa.

Document Technique d'Application 5/09-2088 "Glasdan ELAST-Esterdan ELAST-Polydan ELAST".

Documento de Aplicação DA39/2013.

PRESENTATION

PRESENTATION	VALUE	UNIT
Length	10	m
Width	1	m
Roll surface	10	m ²
Rolls per pallet	25	rolls
Product Code	141249 white	-



1. mineral protection
2. SBS modified bitumen
3. reinforced polyester felt
4. polyethylene film

INSTRUCTION FOR USE

- Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs.
 - When bonding the substrate should be prepared using a primer either Impridan 100, CURIDAN, MAXDAN or MAXDAN CAUCHO at the recommended rate prior to installation of the waterproofing system.
 - Where the membranes are adhered to insulation boards, the resistance to wind uplift will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This should be taken into account when the insulation material is selected.
 - At falls in excess of 5° (1:11) precautions against slippage, and requirements for mechanical fixing should be observed.
 - The membrane may be laid in conditions normal to roofing work and must not be laid in rain, snow or heavy fog, nor if the temperature falls below 5°C, unless precautions against condensation have been taken.
 - The roofing layers must always be installed with staggered overlaps and in such a manner that no counter-seams in the direction of the outlets are made.
 - Attachment of reinforced bituminous membrane roofing maybe achieved by full bonding, by partial bonding or loose laid (ballasted); the choice should depend upon the type of substrate and the required resistance to wind uplift pressure. BR>- The first layer is installed over the substrate, full bonded, partially bonded, or loose laid (ballasted).
 - Fully bonded torch-applied membranes should only be used with non-combustible substrates and with surfaces designed to enable the torch application of subsequent layers. It is possible to install a torch-receivable first layer in hot bitumen, and then torch apply the second or capping sheet, which should be specifically designed for torching. Bonding is achieved by melting the lower surface by torching and pressing the membrane down. Care must be taken not to overheat the membrane. The first layer is installed with side laps of 60 mm and end laps of 75 mm. The top layer/cap sheet is laid over the first layer in the same direction, and fully bonded. The top layer/cap sheets are installed with side laps for the mineral surfaced membranes determined by the selvedge edge and for sanded or plastified top layers a minimum of 75 mm and end laps 100 mm wide.
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- When partially bonded either a layer of GLASDAN 800 P PERFORADO or other suitable venting layer is loose-laid across the substrate edge to edge. The first layer is fully bonded over the venting layer in the direction with side laps of 80 mm and end laps of 75 mm. The top layer/cap sheet is laid over the first layer in the same direction, and fully bonded. The top layer/cap sheets are installed with side laps for the mineral surfaced membranes determined by the selvedge edge and for sanded or plastified top layers a minimum of 75 mm and end laps 100 mm wide.
 - Loose-laid is possible in ballasted systems. A separating layer is loose-laid over the substrate to act with overlaps of 100 mm. The first layer is loose-laid over the separation layer with side laps of 60 mm and end laps of 80 mm wide. The laps are sealed by torch welding. The top layer is laid over the first layer in the same direction, and fully bonded. The top layer/cap sheets are installed with side laps for the mineral surfaced membranes determined by the selvedge edge and for sanded or plastified top layers a minimum of 75 mm and end laps 100 mm wide. The waterproofing system is ballasted with a proper finishes.
 - In all systems, laps between the membrane and any base sheets should be offset by a minimum of 300 mm.
- ADEVERTISMENT: >- Attachment of reinforced bituminous membrane roofing san also be achieved by mechanical fastening with screws and stress plates or by nailing.
- Mechanical fastening of membranes is possible by installing a specially manufactured membrane mechanically fastened with screws and stress plates along the lap, with joints then sealed by torching, with subsequent layers fully bonded.
 - Nailing fastening of membranes is possible by installing a sacrificial specially manufactured layer mechanically fastened with screws and stress plates, or alternatively nails, with subsequent layers fully bonded.

INDICATIONS AND IMPORTANT RECOMMENDATIONS

- The design of the roof should be considered in relation to its compatibility with the building as a whole, and account taken of the significance of materials which may be included for other reasons.
- The roof covering, including joints, parapets, abutments, gutters and outlets, should remain weathertight under the external action of rain, snow, ice, dead and imposed loads, wind loads, solar and night radiation, and the internal environment of the building.
- Falls should be provided to enable the roof to drain towards outlets, gulleys or gutters of sufficient capacity. Gutters and roof drainage should be designed appropriately.
- As failures in flat roofs are often caused by the harmful effects of moisture which is trapped during construction, it is essential that great care be taken to minimize such risks. Trapped water may be the result of the use of wet materials, water from in-situ concrete and wet screeds, or rain on unprotected construction.
- Be careful about damage from the limited foot traffic associated with installation and maintenance operations. Reasonable care should be taken to avoid sharp objects or concentrated loads. Where regular traffic is envisaged, ie maintenance of lift equipment, a walkway should be provided.
- On completion of the roof, the non-mineral finished membranes should have a surface finish applied.
- In the event of damage the membrane must be repaired as soon as possible with a patch of the membrane torch-bonded over the damaged area.
- On cap sheets it is possible that some localized loss of the mineral surfacing may occur, after some years, in areas where complex detailing of the roof design is incorporated.
- The membranes should be subjected to regular annual inspections and roof drains kept clear as is good practice with all roofing membranes.
- Differential movement between the waterproofing membrane and the substrate, or any overlaid insulation in inverted roofs, or other material should be taken into account in design. If necessary, movement joints should be made in the waterproofing membrane.

MAINTENANCE RECOMMENDATIONS

Maintenance requirements for Danosa Roofing Products

The following maintenance checks must be adhered to:

- A general examination on the condition of the waterproofing and surrounding roof components.
- An inspection of all functional roofing elements including skylights, outlets, upstands, penetrations and any other visible roofing components.
- Clean outlets, drains, gutters and remove any debris from the roof.
- Periodic removal of mildew, moss, herbs or any other kind of vegetation that has been accumulation on the waterproofing.
- Periodic removal of possible sediments accumulated on the deck (silt, sledges, slate granules, etc) by occasional water accumulation.
- Periodic removal of debris and small objects that may have accumulated on the roof.
- Ensure surrounding structural elements are sound such as eaves, flashings, slate tiles and brickwork.
- Ensure that the waterproofing is in good condition and there are no blisters, damage or separation.
- Review the condition of the waterproofing (adherence to upstands, condition of overlaps, visual appearance, etc) and repair the defects observed.

These operations must be carried out twice a year, preferably at the beginning of spring or autumn and must be increased in case of decks or valleys with zero falls. It is also necessary to perform additional maintenance depending on the type of roof, location and proximity of roofs to areas with trees or in areas with high levels of pollution.

More details on the document Maintenance and repair recommendations for flat roofs waterproofed with modified bitumen sheets

HANDLING, STORAGE AND CONSERVATION

- This product is neither toxic nor inflammable.
 - Membranes should be stored carefully on clean dry level surfaces, under cover, protected from rain, sun, heat and cold temperatures and clear of the ground. The same protection should be given to materials temporarily kept outdoors or on the roof during construction.
 - Membranes must be stored upright.
 - Membranes should be taken to the roof as required for use.
 - Membranes will be used on a FIFO basis (First In First Out).
 - Do not stack one pallet on another pallet.
 - In all cases, it must be taken into account Health and Safety standards at work, and the rules of good construction practice.
 - Danosa recommends consulting the Safety Data Sheet of this product that is available permanently in www.danosa.com.
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- This product is not toxic or flammable.
 - It must be stored dry and protected from rain, sun, heat and low temperatures.
 - It must be stored upright.
 - Don't store two pallets high.
 - You must use the oldest batch of products first.
 - No waterproofing works should be performed when weather conditions may be unsuitable. These include snow or ice on the roof, heavy rain, moisture, when there are strong winds.
 - In all cases, the rules of health and safety at work and the rules of good construction practice should be considered.
 - To store in racking at height the shelves must have three stringers or beams under the wooden pallet.
 - Before handling the pallet you must check the status of the pallet and reinforce if necessary.
 - If you are using a crane for handling purposes, you must ensure protection for others as stated on our packaging.
 - Danosa advise you to consult the MSDS for this product which is available at www.danosa.com or may be obtained by writing to our Technical Department.

WARNING

The information that appears in the following document makes reference to the uses and utilities of danosa's products and systems, and it is based on the knowledge that have been learnt until present, by Danosa. This is only possible if products have been stored and used in an appropriate way.

Nevertheless, Danosa is not responsible for unsuitable uses of the products neither any other facts, such as meteorological facts. So Danosa is just responsible for the quality related to the provided products. Danosa reserves the right to carry out modifications without previous notice.

The values that appear in the technical sheet are the results of the tests that have been performed in our laboratory. July 2013.

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